EPA/ROD/R03-86/033
1986

EPA Superfund
Record of Decision:

DRAKE CHEMICAL
EPA ID: PAD003058047
OU 02
LOCK HAVEN, PA
05/13/1986

DRAKE CHEMICAL SITE (PHASE II), LOCK HAVEN, CLINTON COUNTY, PENNSYLVANIA.

#DR
DOCUMENTS REVIEWED:

THE UNDERLYING TECHNICAL INFORMATION, UNLESS OTHERWISE SPECIFIED, USED FOR ANALYSIS OF COST-EFFECTIVENESS AND FEASIBILITY OF REMEDIAL ALTERNATIVES IS INCLUDED IN THE FOLLOWING DOCUMENTS AND PROJECT CORRESPONDENCE. I HAVE BEEN BRIEFED BY MY STAFF ON THEIR CONTENTS, AND THEY FORM THE PRINCIPAL BASIS FOR MY DECISION ON THE APPROPRIATE EXTENT OF REMEDIAL ACTION.

- "REMEDIAL INVESTIGATION REPORT" - PHASE II (DRAFT), DRAKE CHEMICAL SITE, LOCK HAVEN, CLINTON COUNTY, PENNSYLVANIA. (NUS CORPORATION, JANUARY, 1985, REVISED APRIL, 1985).

- "FEASIBILITY STUDY OF ALTERNATIVES - PHASE II BUILDING AND CONTAMINATED STRUCTURES" (DRAFT) - DRAKE CHEMICAL SITE, LOCK HAVEN, CLINTON COUNTY, PENNSYLVANIA (NUS CORPORATION, MARCH, 1986).

- RECOMMENDATIONS BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES.

- STAFF SUMMARIES AND RECOMMENDATIONS, INCLUDING THE ATTACHED "SUMMARY OF REMEDIAL ALTERNATIVE SELECTION, DRAKE CHEMICAL SITE" (PHASE II).

#OM
OPERATION AND MAINTENANCE:

NO OPERATION AND MAINTENANCE IS NECESSARY FOR THIS PHASE OF THE DRAKE SUPERFUND PROJECT. THIS IS AN INTERIM PHASE TO THE ULTIMATE REMEDY. PHASE III WILL ADDRESS THE REMAINING CONTAMINATED SOILS, CHEMICALS, SLUDGES AND GROUND WATER CONTAMINATION.

#DE
DECLARATION:

CONSISTENT WITH THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980 (CERCLA) AND THE NATIONAL CONTINGENCY PLAN (40 CFR PART 300), I HAVE DETERMINED THAT THE REMEDIAL ACTIONS DESCRIBED ABOVE CONSTITUTE A COST-EFFECTIVE REMEDY WHICH MITIGATES AND MINIMIZES DAMAGE TO THE PUBLIC HEALTH, WELFARE AND THE ENVIRONMENT. THE REMEDIAL ACTION WILL BE DESIGNED TO MINIMIZE ANY TEMPORARY INCONVENIENCES TO THE LOCAL POPULATION DURING THE CONSTRUCTION PHASE.

THE STATE OF PENNSYLVANIA HAS BEEN CONSULTED AND AGREES WITH THE APPROVED REMEDY. NO OPERATION AND MAINTENANCE IS REQUIRED FOR THIS PHASE OF THE PROJECT.

I HAVE DETERMINED THAT THE ACTION BEING TAKEN IS APPROPRIATE WHEN BALANCED AGAINST THE AVAILABILITY OF TRUST FUND MONIES FOR USE AT OTHER SITES.

5/13/86
DATE

JAMES M. SEIF
REGIONAL ADMINISTRATOR
EPA REGION III.

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

DRAKE CHEMICAL (PHASE II)

#SLD

1. SITE BACKGROUND INFORMATION:

THE DRAKE CHEMICAL SITE IS LOCATED IN LOCK HAVEN, CLINTON COUNTY, PENNSYLVANIA. THE DRAKE CHEMICAL SITE IS BOUNDED ON THE WEST BY THE AMERICAN COLOR AND CHEMICAL COMPANY. AN APARTMENT COMPLEX, A SHOPPING CENTER, AND CASTANEA TOWNSHIP PARK ARE LOCATED WITHIN 1/4 MILE OF THE SITE. BALD EAGLE CREEK IS LOCATED LESS THAN 1/2 MILE SOUTH OF THE SITE, AND THE WEST BRANCH OF THE SUSQUEHANNA RIVER IS LOCATED APPROXIMATELY 3/4 MILE NORTH OF THE SITE. A LEACHATE STREAM ORIGINATES AT THE LEACHATE LAGOON AND FLOWS THROUGH CASTANEA TOWNSHIP TO BALD EAGLE CREEK.

THE EIGHT-ACRE SITE, SHOWN ON FIGURE 1, IS INACTIVE AND CONTAINS SIX MAJOR BUILDINGS, INCLUDING FORMER OFFICES, PRODUCTION FACILITIES, AND A WASTEWATER TREATMENT BUILDING. INSIDE AND SURROUNDING THE PROCESS BUILDINGS ARE APPROXIMATELY 60 PROCESS TANKS AND REACTORS. OUTSIDE THESE BUILDINGS ARE APPROXIMATELY 10 LARGE TANKS THAT WERE USED FOR BULK STORAGE OF ACIDS, BASES, AND FUEL OILS. ALSO LOCATED ON SITE ARE TWO LINED WASTEWATER TREATMENT LAGOONS, AN UNLINED LAGOON (LEACHATE LAGOON) FROM WHICH A LEACHATE STREAM ORIGINATES, A SECOND SMALL UNLINED LAGOON (CANAL LAGOON), AND AN UNLINED SLUDGE LAGOON. CHEMICAL SLUDGE AND CONTAMINATED SOIL COVERS OR UNDERLIES MUCH OF THE OPEN AREA ON SITE AND WAS DETECTED AS DEEP AS 20 FEET BELOW THE GROUND SURFACE. DRUMS AND BULK WASTE MAY ALSO BE BURIED AT THE SITE. CONSTRUCTION DEBRIS IS STREWN ABOUT THE SITE.

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DRAKE CHEMICAL, INC., PURCHASED THE SITE IN 1962. SITE USE BEFORE 1962 IS NOT COMPLETELY KNOWN, BUT IT IS REPORTED THAT THE SITE WAS USED FOR THE PRODUCTION OF CHEMICALS. AERIAL PHOTOGRAPHS SHOW THAT TANKS, BUILDINGS, AND A LAGOON WERE LOCATED ON THE SITE BETWEEN 1951 AND 1959.

THE EARLY PRODUCTION HISTORY AT DRAKE CHEMICAL, INC., IS UNCLEAR, BUT THE FACILITY HAD BEEN INVOLVED FOR MANY YEARS IN THE MANUFACTURE OF BATCHES OF SPECIALTY, INTERMEDIATE CHEMICALS FOR PRODUCERS OF DYES, PHARMACEUTICALS, COSMETICS, HERBICIDES, AND PESTICIDES. THE ORGANIC COMPOUND, 2,3,6-TRICHLOROPHENYLACETIC ACID (FENAC), A HERBICIDE MANUFACTURED AT THE PLANT, IS A MAJOR SITE CONTAMINANT. THE CHEMICAL PRODUCTS WERE PRODUCED USING THE PROCESSES OF CHLORINATION, CYANATION, SULFONATION, AND AMINATION. MOST PROCESSES AT DRAKE CHEMICAL, INC., WERE NOT HIGHLY AUTOMATED AND REQUIRED HAND CHARGING OF CHEMICALS INTO REACTOR VESSELS. MANY WASTE STREAMS PRODUCED DURING THE VARIOUS MANUFACTURING PROCESSES WERE EITHER TREATED OR PLACED DIRECTLY IN DRUMS AND STORED ON SITE. MUCH OF THE FORMER LAGOON AREA ONSITE WAS FILLED WITH TREATED AND UNTREATED PROCESS WASTES AND SLUDGES, ALONG WITH DEMOLITION DEBRIS AND OTHER MISCELLANEOUS FILL MATERIALS.

DRAKE CHEMICAL, INC., WAS CITED SEVERAL TIMES BETWEEN 1973 AND 1982 FOR VIOLATIONS OF ENVIRONMENTAL AND HEALTH AND SAFETY REGULATIONS. AFTER DRAKE CHEMICAL, INC., FAILED TO RESPOND TO A REQUEST FOR VOLUNTARY CLEANUP, THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA), BEGAN EMERGENCY CLEANUP ACTIVITIES AT THE SITE ON FEBRUARY 28, 1982. DURING THE EMERGENCY CLEANUP, SURFACE DRUMS AND SLUDGES AND LIQUIDS FROM PROCESS AND STORAGE TANKS WERE REMOVED FROM THE SITE. A FENCE WAS ALSO ERECTED AROUND THE SITE. THE CLEANUP WAS COMPLETED ON APRIL 21, 1982. THE ENVIRONMENTAL RESPONSE TEAM (ERT) OF EPA PERFORMED AN EXTENT OF CONTAMINATION (EOC) STUDY IN MARCH, 1982, WHICH FOCUSED ON THE AREA AROUND THE LEACHATE STREAM. THE RESULTS OF THIS STUDY WERE SUMMARIZED IN THE PHASE I RECORD OF DECISION (SEPTEMBER 30, 1984).

IN AUGUST, 1982, THE EPA INITIATED REMEDIAL ACTION STUDIES AT THE DRAKE CHEMICAL SITE. A PHASE I (LEACHATE STREAM) REMEDIAL INVESTIGATION REPORT WAS COMPLETED IN AUGUST, 1984. A DRAFT RI REPORT ON THE REMAINDER OF THE SITE WAS RELEASED IN APRIL, 1985, WHILE THE PHASE II (BUILDINGS AND STRUCTURES) FEASIBILITY STUDY REPORT WAS COMPLETED IN MARCH, 1986.

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2. NATURE AND EXTENT OF PROBLEMS

2A: BUILDINGS, TANKS, AND DEBRIS:

SAMPLES FROM BUILDINGS, PROCESS EQUIPMENT AND INDOOR AND OUTDOOR TANKS WERE COLLECTED DURING OCTOBER, 1983 TO DETERMINE THE CHEMICAL COMPOUNDS CONTAINED IN AND ABOUT THE BUILDINGS AT THE DRAKE CHEMICAL SITE. SAMPLING POINTS FOR THE BUILDING SAMPLES INCLUDED TANKS, DRIPPINGS ON FLOORS AND SOIL, RAFTERS, SWEEPINGS, DECOMPOSED BAGS, OVENS, CENTRIFUGES, BATHS, OPEN DRUMS, FILTER PRESSES, DRAINS, AND OUTDOOR DEBRIS.

FIGURE 2 SHOWS BUILDING LOCATIONS ON SITE. FIGURE 3 SHOWS THE LAYOUT OF BUILDING 1. FIGURES 4 AND 5 SHOW

THE FIRST AND SECOND FLOORS OF BUILDING 2. FIGURES 6 AND 7 SHOW LAYOUTS OF BUILDING 3 AND 4 RESPECTIVELY.

ANALYSIS FOR THE BUILDING SAMPLES INCLUDED THE ORGANICS ON THE HAZARDOUS SUBSTANCES LIST (HSL), FENAC, TOTAL ORGANIC HALOGENS (TOH), AND BETA-NAPHTHYLAMINE. FENAC WAS DETECTED IN ALL BUT FOUR OF THE SAMPLES ANALYZED FOR THE COMPOUND. BETA-NAPHTHYLAMINE WAS DETECTED ONLY IN BUILDING 1. THESE SAMPLES WERE COLLECTED FROM OVENS, THE TOP OF TANK 1-1, TANK 1-2, AND A FILTER PRESS.

BUILDING SAMPLES AND ANALYSIS FOR THE INDICATOR COMPOUNDS SHOW CONTAMINATION IN A CONCENTRATION RANGE OF LT 0.1-460,000 UG/G OF FENAC (2,4,6 TRICHLOROPHENYL ACETIC ACID), 30-232,000 UG/G OF TOH AND NO DETECTION - 3,800 UG/G OF BETA-NAPHTHYLAMINE.

A WIDE RANGE OF ORGANIC COMPOUNDS WAS DETECTED DURING THE INVESTIGATION AT CONCENTRATIONS WHICH VARIED FROM PART-PER-BILLION TO PERCENT LEVELS. COMPOUNDS WITH THE HIGHEST CONCENTRATIONS WERE DETECTED MOSTLY IN SAMPLES FROM BUILDINGS 1 AND 2 AND IN DEBRIS SAMPLES FROM OUTSIDE THE BUILDINGS.

THE COMPOUNDS DETECTED ARE LISTED ON TABLES 1 AND 2.

ORGANIC COMPOUNDS DETECTED IN 10 OR MORE SAMPLES ARE LISTED BELOW. THE NUMBER OF TIMES DETECTED IS IN PARENTHESES:

- CHLOROBENZENE (26)
- BIS(2-ETHYLHEXYL)PHTHALATE (20)
- TOLUENE (19)
- METHYLENE CHLORIDE (17)
- BENZO(A)ANTHRACENE (16)
- ACETONE (14)
- BENZOIC ACID (13)
- BENZENE (13)
- TRICHLOROETHYLENE (13)
- 1,3-DICHLOROBENZENE (12)
- CHLOROFORM (10)
- ETHYL BENZENE (10)
- TOTAL XYLENES (10).

THE CYANIDE TANK BESIDE BUILDING 2 (SEE FIGURE 4) WAS NOT SAMPLED. THE MATERIAL IN THE TANK WAS THOUGHT TO BE A SOLID; THE LEVEL IN THE TANK WAS ESTIMATED BY TAPPING THE SIDE OF THE TANK. THE DIFFICULTY IN OBTAINING A SAMPLE OF THE MATERIAL INSIDE THE TANK AND THE DANGER OF OPENING A SEALED CYANIDE TANK TO THE ATMOSPHERE LED THE SAMPLERS TO CONCLUDE THAT IT WOULD BE UNSAFE TO OPEN THE TANK. A FORMER EMPLOYEE STATED THAT THE TANK CONTAINED CYANIDE SALTS.

2B: LINED LAGOONS:

THE TWO LINED WASTEWATER TREATMENT LAGOONS LOCATED NEAR THE CENTER OF THE SITE WERE SAMPLED DURING AUGUST, 1983.

LAGOON SURFACE WATER SAMPLES WERE ANALYZED FOR THE ORGANICS AND INORGANICS ON THE HSL, FENAC, TOH, TOC, SULFATE, CHLORIDE, AMMONIA, PH, AND CONDUCTIVITY. LAGOON SEDIMENT SAMPLES WERE ANALYZED FOR THE ORGANICS AND INORGANICS ON THE HSL AND FENAC.

THE SURFACE WATER AND SEDIMENT ANALYSIS FOR THESE LAGOONS ARE SUMMARIZED IN TABLES 3, 4, 5 AND 6.

BASED ON THE CHEMICAL ANALYSES, IT APPEARS THAT WATER AND SEDIMENT IN THE LINED LAGOONS ARE CONTAMINATED WITH METALS, FENAC, AND OTHER ORGANIC COMPOUNDS. THE WATERS ARE ALSO ACIDIC WITH PH VALUES OF 2.3 AND 2.4.

THE INTEGRITY OF THE LINERS IS NOT KNOWN. A LEAK IN A LINER COULD CAUSE CONTAMINANTS TO MIGRATE TO SOIL BENEATH THE LAGOONS, THEN TO GROUND WATER, OR COULD CAUSE MIGRATION AS A SEEP FROM THE BANKS OF THE LAGOON. A LARGE AMOUNT OF RAINFALL COULD CAUSE THE LAGOONS TO OVERFLOW. BALD EAGLE CREEK COULD FLOOD TO AN EXTENT THAT WOULD INUNDATE THE LAGOONS. THE SITE IS IN THE 100-YEAR FLOODPLAIN. FLOODING COULD CAUSE CONTAMINANTS TO MIGRATE TO SURFACE WATER, SEDIMENT, SOIL, AND/OR GROUND WATER. CONTAMINANT MIGRATION TO THE AIR WAS NOT EVIDENCED DURING THE INVESTIGATION.

THE ESTIMATED TOTAL VOLUME OF LIQUID AND SEDIMENTS IN THE TWO LAGOONS IS 192,000 GALLONS.

3: HEALTH AND ENVIRONMENTAL CONCERNS:

PRESENT IMPACTS OF THE LINED LAGOONS ARE NEGLIGIBLE, EXCEPT FROM DIRECT CONTACT. POTENTIAL IMPACTS COULD

ARISE IN THE EVENT OF FLOOD, LAGOON OVERFLOW, OR LINER FAILURE.

OF GREATER IMPORTANCE IS THE WIDESPREAD BUILDING CONTAMINATION. THE GREATEST RISKS TO HUMAN HEALTH ARE ASSOCIATED WITH DIRECT CONTACT WITH THE CONTAMINANTS, MANY OF WHICH ARE HIGHLY TOXIC OR CARCINOGENIC. BETANAPHTHYLAMINE IS A POTENT HUMAN BLADDER CARCINOGEN WHICH HAS BEEN DETECTED AT HIGH LEVELS IN BUILDING 1. THIS COMPOUND HAS BEEN THE FOCUS OF A HEALTH SCREENING BEING PERFORMED IN THE LOCK HAVEN AREA BY THE PENNSYLVANIA DEPARTMENT OF HEALTH, DIVISION OF ENVIRONMENTAL EPIDEMIOLOGY.

THE BUILDINGS ARE PRESENTLY IN A DILAPIDATED CONDITION AND CONTINUE TO DETERIORATE, CAUSING A HAZARD FROM COLLAPSE. A FIRE COULD CAUSE CONTAMINANTS TO BE RELEASED TO THE AIR. A FLOOD COULD WASH AWAY CONTAMINANTS PRESENT IN THE BUILDINGS, DEBRIS PILES, AND CONTAMINATED STRUCTURES.

THERE HAS ALSO BEEN RECENT EVIDENCE OF TRESPASS AT THE SITE EVEN THOUGH THE SITE IS FENCED AND THE GATES ARE LOCKED. A PORTION OF THE FENCE HAS BEEN CUT OUT AND A HOLE LARGE ENOUGH FOR HUMAN ENTRY IS PRESENT.

THE OBJECTIVE OF REMEDIAL ACTION FOR PHASE II AT THE DRAKE CHEMICAL SITE IS TO REDUCE OR ELIMINATE EXPOSURE PATHWAYS BY WHICH BUILDING CONTAMINANTS MAY REACH POTENTIAL RECEPTORS. THE EXPOSURE PATHWAYS OF MOST CONCERN ARE AS FOLLOWS:

- DIRECT CONTACT WITH CONTAMINATED AREAS ON SITE
- POTENTIAL MIGRATION OF CONTAMINATION VIA FIRE OR FLOOD.

GENERAL RESPONSE ACTIONS AND ASSOCIATED REMEDIAL TECHNOLOGIES HAVE TO BE DEVELOPED TO MEET THE STATED OBJECTIVES.

4: SCREENING OF REMEDIAL ACTION TECHNOLOGIES:

FEASIBLE REMEDIAL TECHNOLOGIES FOR THE BUILDINGS AT THE DRAKE CHEMICAL SITE HAVE BEEN IDENTIFIED BY SCREENING GENERAL RESPONSE ACTIONS FOR APPLICATION TO SITE PROBLEMS CAUSED BY THE BUILDINGS AND CONTAMINATED STRUCTURES AND BY EVALUATING SITE-SPECIFIC INFORMATION OBTAINED FOR THE BUILDINGS DURING THE REMEDIAL INVESTIGATION (RI). EACH GENERAL RESPONSE ACTION CONSISTS OF ONE OR MORE ASSOCIATED TECHNOLOGIES THAT ARE ALSO CONSIDERED FOR APPLICABILITY. THE DRAKE CHEMICAL SITE GENERAL RESPONSE ACTIONS AND ASSOCIATED TECHNOLOGIES FOR THE BUILDINGS AND CONTAMINATED STRUCTURES ARE PRESENTED IN TABLE 7.

THE TECHNOLOGIES WERE THEN STUDIED AND REVIEWED IN DEPTH USING THE FOLLOWING CRITERIA:

- TECHNICAL
- ENVIRONMENTAL/PUBLIC HEALTH
- INSTITUTIONAL
- COST.

FEASIBLE REMEDIAL TECHNOLOGIES THAT REMAINED AFTER THIS SCREENING PROCESS WERE THEN COMBINED INTO REMEDIAL ACTION ALTERNATIVES THAT CAN BE APPLIED TO THE REMEDIATION OF THE BUILDINGS AND CONTAMINATED STRUCTURES AT THE DRAKE CHEMICAL SITE.

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5: REMEDIAL ACTION ALTERNATIVES:

VARIOUS REMEDIAL ACTION ALTERNATIVES WERE DEVELOPED BY ASSEMBLING APPROPRIATE REMEDIAL TECHNOLOGIES INTO GROUPS OF ACTIONS TO ADDRESS THE OBJECTIVES OF THE REMEDIAL ACTION. THE DEVELOPMENT OF REMEDIAL ACTION ALTERNATIVES TO REMOVE THE CONTAMINATED BUILDINGS AND STRUCTURES ONSITE IS CONSISTENT WITH THE VARIOUS CATEGORIES OF CLEANUP AS REQUIRED BY THE NCP, SECTION 300.68. HOWEVER, SOME OF THESE CATEGORIES MAY NOT BE FILLED SINCE THE ONLY PRACTICAL ALTERNATIVES, EXCEPT NO ACTION, MUST BE DESIGNED TO MEET RCRA REQUIREMENTS (I.E. TRANSPORTATION AND ULTIMATE DISPOSAL).

THE REFERENCED CATEGORIES ARE AS FOLLOWS:

- I - ALTERNATIVES FOR TREATMENT OR DISPOSAL AT AN OFFSITE FACILITY APPROVED BY EPA.

- II - ALTERNATIVES THAT ATTAIN APPLICABLE OR RELEVANT AND APPROPRIATE FEDERAL PUBLIC HEALTH OR ENVIRONMENTAL STANDARDS.

- III - ALTERNATIVES THAT EXCEED APPLICABLE OR RELEVANT AND APPROPRIATE PUBLIC HEALTH OR ENVIRONMENTAL STANDARDS.

- IV - ALTERNATIVES THAT REDUCE THE LIKELIHOOD OF PRESENT OR FUTURE THREAT AND MEET CERCLA OBJECTIVES OF ADEQUATELY PROTECTING PUBLIC HEALTH, WELFARE, AND THE ENVIRONMENT.

- V - NO ACTION ALTERNATIVE.

IN ADDITION, THE REMEDIAL ACTION ALTERNATIVES MUST BE FURTHER DEFINED AS A SOURCE CONTROL REMEDY, OR A MANAGEMENT OF MIGRATION REMEDY, AS REQUIRED IN THE NCP (40 CFR 300.68 (D)).

ALTERNATIVES THAT INCLUDE PROVISIONS FOR FLOOD PROTECTION ASSUME THAT FLOOD PROTECTION MEASURES FOR LOCK HAVEN PROPOSED BY THE U.S. ARMY CORPS OF ENGINEERS (USACOE) WILL NOT BE IMPLEMENTED BEFORE REMEDIAL ACTION TAKES PLACE AT THE DRAKE CHEMICAL SITE.

5A: ALTERNATIVE 1 - TANK, BUILDING, DEBRIS, AND LINED LAGOON REMOVAL WITH OFFSITE DISPOSAL AT A RCRA-APPROVED FACILITY:

THE PURPOSE OF THIS ALTERNATIVE IS TO DISMANTLE ALL STRUCTURES FOR OFFSITE DISPOSAL. INCLUDED ARE THE FOLLOWING TASKS:

- DRAINING AND REMOVAL OF THE TWO LINED WASTEWATER TREATMENT LAGOONS, WITH OFFSITE TREATMENT OF LIQUID AND SLUDGE IN A RCRA-APPROVED TREATMENT FACILITY.
- REMOVAL OF TANKS, BUILDINGS, AND DEBRIS.
- INCINERATION OF CHEMICALS STORED IN WAREHOUSE.
- DISPOSAL OF ALL OTHER MATERIALS, WITHOUT DECONTAMINATION, IN AN OFFSITE, RCRA-APPROVED LANDFILL.

REMEDIAL ACTION ALTERNATIVE 1 IS CLASSIFIED AS A SOURCE CONTROL REMEDY. THIS ALTERNATIVE CALLS FOR THE DISMANTLING OF ALL BUILDINGS IN A CONTROLLED FASHION. TANKS, DEBRIS, AND THE LINED LAGOONS WOULD ALSO BE REMOVED.

ALL DISMANTLED BUILDINGS, TANKS, ETC., WILL BE LOADED ONTO TRUCKS, WITHOUT DECONTAMINATION, AND HAULED TO THE NEAREST OFFSITE, RCRA-APPROVED LANDFILL FOR DISPOSAL. LIQUID WASTES WILL BE HAULED AWAY FOR APPROPRIATE TREATMENT OR DISPOSAL. PRECAUTIONS WOULD BE TAKEN TO MINIMIZE ANY RELEASE OF CONTAMINANTS DURING TRANSPORT.

THIS ALTERNATIVE'S BASELINE CAPITAL COST IS $3,632,000. THERE ARE NO OPERATION AND MAINTENANCE COSTS ANTICIPATED.

5B: ALTERNATIVE 2 - TANK, BUILDING, DEBRIS, AND LINED LAGOON REMOVAL, DECONTAMINATION, AND OFFSITE DISPOSAL:

THE PURPOSE OF THIS ALTERNATIVE IS TO DISMANTLE ALL STRUCTURES, DECONTAMINATE SALVAGEABLE MATERIAL (METALS), DISPOSE OF ALL OTHER STRUCTURES IN AN OFFSITE RCRA-APPROVED LANDFILL. INCLUDED ARE THE FOLLOWING TASKS:

- DRAINING AND REMOVAL OF THE TWO LINED WASTEWATER TREATMENT LAGOONS WITH OFFSITE TREATMENT OF LIQUID AND SLUDGE IN A RCRA-APPROVED TREATMENT FACILITY.
- REMOVAL OF TANKS, BUILDINGS, AND DEBRIS.
- INCINERATION OF CHEMICALS STORED IN WAREHOUSE.
- DECONTAMINATION OF SALVAGEABLE MATERIAL (METALS, STEEL STRUCTURES, ETC.).
- DISPOSAL OF DECONTAMINATION FLUIDS AND OTHER LIQUID WASTES.
- DISPOSAL OF ALL MATERIALS, OTHER THAN DECONTAMINATED METALS, IN A RCRA-APPROVED LANDFILL.

REMEDIAL ACTION ALTERNATIVE 2 IS CLASSIFIED AS A SOURCE CONTROL REMEDY. THIS ALTERNATIVE CALLS FOR THE DISMANTLING OF ALL BUILDINGS IN A CONTROLLED FASHION. TANKS, DEBRIS, AND THE LINED LAGOONS WOULD ALSO BE REMOVED. SALVAGEABLE MATERIALS (METALS) WOULD BE CLEANED AND DECONTAMINATED, AS REQUIRED, PRIOR TO BEING TURNED OVER TO THE CONTRACTOR. ALL OTHER MATERIAL OR STRUCTURES WOULD BE LOADED ONTO TRUCKS AND HAULED TO AN OFFSITE, RCRA-APPROVED FACILITY. THIS ALTERNATIVE'S BASELINE CAPITAL COST IS $3,143,000. THERE ARE NO OPERATION AND MAINTENANCE COSTS ANTICIPATED.

5C: ALTERNATIVE 3 - TANK, BUILDING, DEBRIS, AND LINED LAGOON REMOVAL WITH OFFSITE DISPOSAL DEPENDENT ON THE AMOUNT OF CONTAMINATION:

THE PURPOSE OF THIS ALTERNATIVE IS TO DISMANTLE ALL STRUCTURES, SEPARATE CONTAMINATED AND UNCONTAMINATED MATERIALS BASED ON WIPE SAMPLING, DISPOSE OF ALL CONTAMINATED MATERIALS IN AN OFFSITE, RCRA-APPROVED LANDFILL, AND DISPOSE OF ALL UNCONTAMINATED MATERIAL IN AN OFFSITE DEMOLITION WASTE LANDFILL OR OTHER APPROVED OFFSITE FACILITY. INCLUDED ARE THE FOLLOWING TASKS:

- DRAINING AND REMOVAL OF THE TWO LINED WASTEWATER TREATMENT LAGOONS WITH OFFSITE TREATMENT OF LIQUID AND SLUDGE IN A RCRA-APPROVED TREATMENT FACILITY.

- INCINERATION OF CHEMICALS STORED IN WAREHOUSE.
- SAMPLING OF THE TANKS, BUILDINGS, AND DEBRIS TO DETERMINE WHICH MATERIALS ARE CONTAMINATED AND WHICH MATERIALS ARE NOT CONTAMINATED.
- REMOVAL OF TANKS, BUILDINGS, AND DEBRIS.
- DISPOSAL OF CONTAMINATED MATERIALS IN AN OFFSITE, RCRA-APPROVED LANDFILL.
- DISPOSAL OF NON-CONTAMINATED MATERIALS IN AN OFFSITE, DEMOLITION WASTE LANDFILL OR OTHER APPROVED OFFSITE FACILITY.

REMEDIAL ACTION ALTERNATIVE 3 IS CLASSIFIED AS A SOURCE CONTROL REMEDY. THIS ALTERNATIVE CALLS FOR THE DISMANTLING OF ALL BUILDINGS IN A CONTROLLED FASHION. TANKS, DEBRIS, AND THE LINED LAGOONS WILL ALSO BE REMOVED. ALL MATERIALS WILL BE LOADED ONTO TRUCKS AND HAULED TO AN APPROPRIATE OFFSITE FACILITY ACCORDING TO THE AMOUNT OF CONTAMINATION PRESENT ON THE VARIOUS MATERIALS INVOLVED WITH THIS OPERABLE UNIT. THIS ALTERNATIVE'S BASELINE CAPITAL COST IS $3,488,000. THERE ARE NO OPERATION AND MAINTENANCE COSTS ANTICIPATED.

5D: ALTERNATIVE 4 - TANKS, BUILDING, DEBRIS, AND LINE LAGOON REMOVAL; OFFSITE DISPOSAL IN A NEW LANDFILL CONSTRUCTED ADJACENT TO THE SITE:

THE PURPOSE OF THIS ALTERNATIVE IS TO DISMANTLE ALL STRUCTURES, CONSTRUCT A NEW RCRA-DESIGNED LANDFILL ADJACENT TO THE SITE, AND DISPOSE OF ALL MATERIALS IN THIS LANDFILL. LAGOON WASTE AND CHEMICALS IN THE WAREHOUSE WOULD BE TREATED OFFSITE.

THE FOLLOWING TASKS WILL BE IMPLEMENTED AS PART OF THIS ALTERNATIVE:

- DRAINING AND REMOVAL OF THE TWO LINED WASTEWATER TREATMENT LAGOONS WITH OFFSITE TREATMENT OF LIQUID AND SLUDGE IN A RCRA-APPROVED TREATMENT FACILITY.
- INCINERATION OF CHEMICALS STORED IN WAREHOUSE.
- CONSTRUCTION OF A FLOOD PROTECTION DIKE TO PROTECT AGAINST A 100-YEAR FLOOD.
- CONSTRUCTION OF A DOUBLE LINER LANDFILL WITHIN THE AREA PROTECTED BY THE FLOOD DIKE.
- REMOVAL OF TANKS, BUILDINGS, AND DEBRIS WITH DISPOSAL IN THE NEWLY CONSTRUCTED LANDFILL.
- CAPPING, GRADING, AND REVEGETATION OF THE LANDFILL AND ADJACENT AREAS.
- PERFORMANCE OF POST CLOSURE MONITORING.

REMEDIAL ACTION 4 IS CLASSIFIED AS A SOURCE CONTROL REMEDY. THIS ALTERNATIVE CALLS FOR DISMANTLING OF ALL BUILDINGS IN A CONTROLLED FASHION. TANKS, DEBRIS, AND THE LINED LAGOONS WOULD ALSO BE REMOVED. A LANDFILL WOULD BE CONSTRUCTED ON PROPERTY LOCATED BETWEEN THE RAILROAD TRACKS AND THE ROUTE 220 EMBANKMENT.

THIS ALTERNATIVE REQUIRES THE CONSTRUCTION OF A LEVEE TO PROTECT THE LANDFILL FROM POTENTIAL FLOODS. THIS COMPACTED, EARTHEN LEVEE WOULD BE COVERED WITH VEGETATION AND RIP-RAP AS FLOODWATER VELOCITY PROTECTION MEASURES. THE ELEVATION OF THE FLOOD PROTECTION DIKE WOULD BE 565.5 MSL AND WOULD BE BASED ON THE USACOE 100-YEAR FLOOD STAGE DEVELOPED FOR THE PROPOSED LOCK HAVEN FLOOD CONTROL PROJECT.

THE FIRST STEP WOULD BE THE CONSTRUCTION OF THE FLOOD PROTECTION DIKE SINCE THIS AREA IS PRONE TO FLOODING. A RCRA-STYLE, DOUBLE-LINER LANDFILL WOULD THEN BE CONSTRUCTED WITHIN THE FLOOD PROTECTION DIKE (SEE FIGURE 8). AS THE BUILDINGS AND CONTAMINATED STRUCTURES ARE DISMANTLED, THEY WOULD BE GRADED AND CAPPED WITH A MULTIMEDIA CAP. THE IMPERVIOUS ZONES OF THE CAP AND THE LINER WOULD BE CONNECTED TO ENCAPSULATE THE WASTE. THE AREA WOULD THAN BE REVEGETATED.

LEACHATE GENERATION FROM THE NEW LANDFILL IS EXPECTED TO BE MINIMAL BECAUSE OF THE NATURE OF THE WASTES (DISMANTLED BUILDING MATERIALS). ANY LEACHATE THAT IS GENERATED WOULD BE COLLECTED AND HAULED AWAY FOR APPROPRIATE TREATMENT OR DISPOSAL.

THE AREA REQUIRED FOR THE CONSTRUCTION OF THE FLOOD PROTECTION DIKE AND THE LANDFILL WILL REQUIRE THE PURCHASE OF LAND ADJACENT TO THE SITE. THIS PROPERTY IS IN CASTANEA TOWNSHIP IN THE CLINTON COUNTY RENEWAL AREA. THIS AREA IS THE FORMER RESIDENTIAL AREA WHERE THE HOUSING WAS REMOVED WHEN THE AREA WAS DEDICATED AS A CORRIDOR FOR ROUTE 220. THIS OPTION'S BASELINE CAPITAL COST IS $2,894,000. THE OPERATION AND MAINTENANCE COST FOR THIS ALTERNATIVE IS ESTIMATED TO BE $41,000 ANNUALLY.

5E: ALTERNATIVE 5 - NO ACTION:

REMEDIAL ACTION ALTERNATIVE 5 INVOLVES TAKING NO REMEDIAL ACTION TO REMOVE TANKS, BUILDINGS, DEBRIS, OR THE LINED LAGOONS. THE BUILDINGS AND TANKS WOULD CONTINUE TO DETERIORATE, PRESENTING A HAZARD FROM COLLAPSE. THE DIRECT CONTACT RISK AND THE POSSIBILITY OF CONTAMINANT MIGRATION BY AIRBORNE PARTICULATES WOULD REMAIN. CONTAMINANTS PRESENT IN THE BUILDINGS AND CONTAMINATED STRUCTURES COULD MIGRATE DURING A FIRE OR A FLOOD CAUSING POTENTIAL EXPOSURE TO DOWNSTREAM OR DOWNWIND RECEPTORS.

#RA
6: RECOMMENDED ALTERNATIVE:

SECTION 300.68 (I) OF THE NCP STATES THAT THE APPROPRIATE EXTENT OF REMEDY SHALL BE DETERMINED BY THE LEAD AGENCY'S SELECTION OF A REMEDIAL ALTERNATIVE WHICH THE AGENCY DETERMINES IS COST-EFFECTIVE AND WHICH EFFECTIVELY MITIGATES OR MINIMIZES DAMAGE TO AND PROVIDES ADEQUATE PROTECTION OF THE PUBLIC HEALTH, WELFARE AND THE ENVIRONMENT. IN SELECTING A REMEDIAL ALTERNATIVE EPA CONSIDERS ALL ENVIRONMENTAL LAWS THAT ARE APPLICABLE OR RELEVANT AND APPROPRIATE. BASED ON THE EVALUATION OF COST-EFFECTIVENESS OF EACH OF THE PROPOSED ALTERNATIVES, THE COMMENTS RECEIVED FROM THE PUBLIC, INFORMATION FROM THE FEASIBILITY STUDY AND RECOMMENDATIONS FROM THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES, WE RECOMMEND THAT ALTERNATIVE NO. 2 AS DESCRIBED ABOVE, BE DESIGNED AND IMPLEMENTED AS PHASE II OF THE DRAKE CHEMICAL SUPERFUND PROJECT.

THIS SELECTED REMEDY WILL BE DESIGNED TO MEET THE PHASE II REMEDIAL ACTION OBJECTIVE OF REDUCING OR ELIMINATING EXPOSURE PATHWAYS BY WHICH BUILDING CONTAMINANTS MAY REACH POTENTIAL RECEPTORS.

FOR THIS ALTERNATIVE, THE DISMANTLING AND REMOVAL OF THE BUILDINGS, PROCESS EQUIPMENT, TANKS, DEBRIS AND LINED WASTEWATER LAGOONS WILL UTILIZE COMMON, WELL-ESTABLISHED METHODS THAT INVOLVE STANDARD ENGINEERING PRACTICES.

BUILDING FLOORS, FOUNDATIONS, ROOFING, AND WALLS AND ALL PROCESS EQUIPMENT AND OTHER BUILDING CONTENTS WOULD BE DISMANTLED USING CONVENTIONAL CONSTRUCTION PRACTICES. THE USE OF EXPLOSIVES WOULD NOT BE PERMITTED. SHORING AND BRACING WOULD BE PROVIDED DURING THE DISMANTLING. WALLS WOULD BE REMOVED FROM ONE STORY AT A TIME. MASONRY WALLS WOULD BE DISMANTLED IN SMALL SECTIONS. STRUCTURAL STEEL WOULD BE REMOVED IN INDIVIDUAL PIECES AND LOWERED CAREFULLY TO THE GROUND. CONSTANT DUST CONTROL WOULD BE MAINTAINED DURING ALL OPERATIONS. WALLS AND OTHER STRUCTURES WOULD BE WETTED DOWN PRIOR TO DISMANTLING. WATER USED FOR DUST CONTROL WOULD BE COLLECTED WHERE POSSIBLE.

SALVAGEABLE MATERIAL, SUCH AS METAL TANKS OR STEEL BEAMS, WOULD BE CLEANED AND DECONTAMINATED, THEN TURNED OVER TO THE CONTRACTOR FOR SALVAGE AS SCRAP METAL. ONE OF THE BUILDING PADS CAN BE USED AS A DECONTAMINATION PAD IF A CURB IS INSTALLED TO CONTAIN DECONTAMINATION FLUIDS; HOWEVER, IT MAY BE MORE COST-EFFECTIVE TO USE THE DECONTAMINATION PAD WHICH WILL BE CONSTRUCTED ONSITE AS PART OF THE PHASE I REMEDY.

IT IS ANTICIPATED THAT A LOW-VOLUME, HIGH-PRESSURE WATER SPRAY SYSTEM WOULD BE USED FOR DECONTAMINATION. THIS METHOD MINIMIZED THE VOLUME OF DECONTAMINATION WATER REQUIRING OFFSITE TREATMENT. FOR COST ESTIMATING PURPOSES, THE VOLUME OF MATERIAL THAT CAN BE DECONTAMINATED FOR DISPOSAL AS NON-HAZARDOUS WASTE WERE ESTIMATED BASED ON BUILDING USE AND TYPE OF MATERIAL. TANKS AND STRUCTURAL STEEL WERE CONSIDERED AS SALVAGEABLE OR AS SCRAP.

IT IS ESTIMATED THAT A TOTAL OF 3,900 CUBIC YARDS OF BUILDING MATERIAL AND SITE DEBRIS WILL NEED TO BE REMOVED. OF THIS, APPROXIMATELY 200 TONS OF METALS MAY BE DECONTAMINATED AND SALVAGED AS SCRAP. QUANTITY ESTIMATES FOR EACH BUILDING ARE SHOWN IN TABLE 8.

ALL MATERIALS THAT ARE NOT METAL AND THEREFORE NOT DECONTAMINATED WILL BE LOADED ON TRUCKS AND TRANSPORTED TO A RCRA-PERMITTED HAZARDOUS WASTE LANDFILL FOR ULTIMATE DISPOSAL.

THE CHEMICALS WHICH WERE STORED IN THE WAREHOUSE ON SITE WILL BE REMOVED, LOADED ONTO TRUCKS AND TRANSPORTED TO A RCRA-PERMITTED HAZARDOUS WASTE INCINERATOR FOR DESTRUCTION. THESE STORED CHEMICALS WERE THE DRAKE CHEMICAL CO. STOCKPILE THAT WERE TO BE USED IN THEIR PROCESSING. HOWEVER, SINCE THEY HAVE BEEN STORED FOR OVER FOUR YEARS, DETERMINATION OF THEIR SALVAGE VALUE WOULD BE DIFFICULT AT BEST.

THERE ARE CURRENTLY TWO LINED WASTEWATER LAGOONS ONSITE WHICH DRAKE USED FOR A SHORT PERIOD OF TIME IN AN EFFORT TO PRE-TREAT THE FACILITY'S EFFLUENT BEFORE DISCHARGE. THE AMOUNT OF LIQUID WHICH IS IN THE LAGOONS AT ANY GIVEN TIME IS DEPENDENT UPON THE BALANCE OF PRECIPITATION AS OPPOSED TO EVAPOTRANSPIRATION AND POSSIBLY LEAKAGE. THE LAGOONS WERE SAMPLED AND ANALYZED AND THE SEDIMENT WAS FOUND TO BE GROSSLY CONTAMINATED WITH A VARIETY OF ORGANIC COMPOUNDS. THESE LAGOONS WILL BE DRAINED AND ALL SEDIMENT WILL BE REMOVED AND TAKEN TO A RCRA-PERMITTED TREATMENT FACILITY. THE LINER OF THE LAGOON WILL BE REMOVED AND LOADED ONTO TRUCKS FOR DISPOSAL AT A RCRA LANDFILL. THE EARTHEN LAGOON STRUCTURE WILL THEN BE SAMPLED AND, IF NECESSARY, LEVELED, TRANSPORTED AND DISPOSED OF PROPERLY.

THE LOCATION OF SOME BURIED PIPELINES IS KNOWN AT THIS TIME; HOWEVER, THERE MAY BE OTHER UNIDENTIFIED PIPELINES. UTILITIES THAT SERVICED THE BUILDINGS, ESPECIALLY SEWERS, ARE ASSUMED TO BE CONTAMINATED. THESE UTILITIES WOULD BE ABANDONED, AND THE PIPES WOULD BE PLUGGED. BURIED PIPES ASSOCIATED WITH PLANT OPERATIONS WILL BE ADDRESSED DURING THE PHASE III REMEDIATION.

UTILITIES THAT CROSS THE SITE AND SERVE OTHER PROPERTIES WOULD BE TEMPORARILY OR PERMANENTLY MOVED OR REPLACED IF THEY INTERFERE WITH IMPLEMENTATION OF REMEDIAL ACTIONS.

#OEL

7. COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS:

THE SELECTED REMEDIAL ACTION ALTERNATIVE WAS EVALUATED IN THE CONTEXT OF SITE REMEDIATION IN COMPLIANCE WITH THE NCP WHICH REQUIRES THAT FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS BE CONSIDERED.

APPLICABLE FEDERAL REGULATIONS INCLUDE THE FOLLOWING:

- RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES
- DEPARTMENT OF TRANSPORTATION (DOT) HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS.

ALL DISPOSAL OF HAZARDOUS MATERIAL, AQUEOUS OR SOLID, WILL BE HAULED BY LICENSED OPERATORS AND WILL BE DISPOSED OF AT RCRA-PERMITTED HAZARDOUS WASTE FACILITIES. ALL MANIFEST REQUIREMENTS WILL BE IMPLEMENTED FOR LOADED HAULS.

ALL LICENSED HAULERS MUST MEET ALL DOT EQUIPMENT AND TRANSPORTATION REQUIREMENTS.

ALL WORK WILL BE PERFORMED UNDER OSHA GUIDELINES FOR WORK AT HAZARDOUS WASTE FACILITIES.

8: EVALUATION OF ALTERNATIVES NOT SELECTED:

8A: ALTERNATIVE 1 - REMOVAL WITH OFFSITE DISPOSAL AT A RCRA-APPROVED FACILITY.

ALTHOUGH THIS ALTERNATIVE GIVES THE SAME RESULTS AS THE SELECTED OPTION IT DOES NOT ATTEMPT TO DECONTAMINATE SALVAGEABLE METAL, AND THEREFORE ALLOWS FOR THE MAXIMUM CAPACITY OF ON-SITE MATERIAL TO BE DISPOSED IN A RCRA FACILITY.

8B: ALTERNATIVE 3 - REMOVAL WITH OFFSITE DISPOSAL DEPENDENT ON THE AMOUNT OF CONTAMINATION.

IN THIS OPTION WIPE SAMPLES WOULD BE TAKEN OF ALL MATERIALS TO DETERMINE THE EXTENT OF BUILDING CONTAMINATION. BASED ON THIS ANALYSIS, A DETERMINATION WILL BE MADE AS TO THE LOCATION OF ULTIMATE DISPOSAL. THE PROBLEM OF SAMPLING A REPRESENTATIVE AMOUNT OF MATERIAL FOR CONTAMINATION DETERMINATION WOULD MAKE IMPLEMENTATION OF THIS OPTION SLOW AND TEDIOUS. SAMPLE VERIFICATION THROUGH QUALITY ASSURANCE CHECKS WOULD NEED TO BE COMPLETED BEFORE ANY ONSITE MATERIAL IS TRANSPORTED OFFSITE. VERIFICATION THAT MATERIAL IS NOT CONTAMINATED (EVEN WITH WIPE SAMPLE ANALYSES) FOR DISPOSAL IN A MUNICIPAL LANDFILL WOULD BE DIFFICULT. SINCE THERE IS NOT A LOT OF ROOM ONSITE FOR A STAGING AREA, DISMANTLING OF THE BUILDINGS WOULD BE SLOW, AND AT TIMES STOPPED WAITING FOR SAMPLE ANALYSIS. CONTINUITY OF WORK WOULD BE SOLELY DEPENDENT UPON LABORATORY EFFICIENCY.

8C: ALTERNATIVE 4 - OFFSITE DISPOSAL IN A NEW LANDFILL CONSTRUCTED ADJACENT TO THE SITE.

ONE OF THE PROBLEMS WITH THE OPTION IS THE ACQUISITION OF LAND TO BUILD THE LANDFILL. EPA WOULD HAVE TO RELY ON LOCAL GOVERNMENT TO DEDICATE LAND FOR A CONSTRUCTION. REALIZATION OF THAT SCENARIO IS NOT VERY PLAUSIBLE. IN ADDITION, BECAUSE THE LANDFILL WOULD BE CONSTRUCTED WITHIN A 100-YEAR FLOODPLAIN, A FLOOD PROTECTIVE DIKE/LEVEE SYSTEM WOULD NEED TO BE CONSTRUCTED. THIS MAY CONFLICT WITH THE U.S. ARMY CORPS OF ENGINEERS, WHICH IS CURRENTLY PLANNING A FLOOD CONTROL LEVEE IN THE LOCK HAVEN AREA. THIRDLY, THIS OPTION HAS MET WITH GREAT OPPOSITION FROM LOCAL OFFICIALS AND THE PUBLIC WHEN DISCUSSED AT THE PUBLIC MEETING.

8D: ALTERNATIVE 5 - NO ACTION.

THE PURPOSE OF REVIEWING THE NO ACTION ALTERNATIVE IS TO ESTIMATE THE EFFECT OF NOT PERFORMING REMEDIAL ACTIONS ON THE BUILDINGS AND CONTAMINATED STRUCTURES.

UNDER THE NO ACTION ALTERNATIVE, THE BUILDINGS WOULD REMAIN STANDING. THIS ALTERNATIVE DOES NOT ADDRESS THE REMEDIATION OF THE BUILDINGS, NOR DOES IT ADDRESS THE POTENTIAL THREAT TO THE ENVIRONMENT OR PUBLIC HEALTH VIA THE ASSOCIATED CONTAMINATION PATHWAYS.

THE POTENTIAL FOR DIRECT CONTACT WITH CONTAMINANTS IN THE BUILDINGS AND CONTAMINATED STRUCTURES WOULD NOT BE ADDRESSED. THERE IS ALSO THE POSSIBILITY OF OFFSITE MIGRATION VIA AIRBORNE PARTICULATES OR BY A FIRE OR FLOOD.

IF NO ACTION WAS CHOSEN AT THIS TIME IT WOULD ONLY DELAY THE INEVITABILITY OF BUILDING REMOVAL, PROBABLY UNTIL PHASE III. REMOVAL OF THE BUILDINGS AND STRUCTURES NOW WOULD ALSO ENHANCE ANY REMEDIAL ACTION TAKEN IN PHASE III.

A COMPARISON OF ALL ALTERNATIVES CAN BE FOUND IN THE ALTERNATIVES MATRIX (TABLE 9).

9: PROPOSED ACTION

WE REQUEST YOUR APPROVAL OF THE RECOMMENDED ALTERNATIVE. THE ESTIMATED BASE CAPITAL COST FOR THIS OPTION IS $3,413,000. THERE ARE NO OPERATION AND MAINTENANCE COSTS FOR THIS ALTERNATIVE.

#TMA
TABLES, MEMORANDA, ATTACHMENTS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

APRIL 15, 1986

MR. STEPHEN R. WASSERSUG, DIRECTOR
HAZARDOUS WASTE MANAGEMENT DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 CHESTNUT BUILDING
9TH AND CHESTNUT STREET
PHILADELPHIA, PA 19107

DEAR MR. WASSERSUG:

THE DRAFT RECORD OF DECISION DOCUMENT FOR THE PHASE II CLEANUP AT THE DRAKE CHEMICAL SUPERFUND SITE WAS RECEIVED ON APRIL 11, 1986. THE DRAFT DOCUMENT HAS BEEN REVIEWED BY THE DEPARTMENT STAFF. THE DEPARTMENT CONCURS WITH THE EPA'S DECISION FOR THIS PHASE OF THE CLEANUP. THE SELECTED ALTERNATIVE, WHICH REMOVES THE BUILDINGS AND LAGOONS WHILE DECONTAMINATING THE SCRAP STEEL, WILL BEST PROTECT THE PUBLIC HEALTH AND THE ENVIRONMENT WHILE MINIMIZING THE AMOUNT OF MATERIALS THAT WILL NEED TO BE DISPOSED OF AT A RCRA LANDFILL.

I UNDERSTAND THAT THE ESTIMATED COST OF THIS PHASE OF THE PROJECT IS $3,413,000, AND THAT IT DOES NOT REQUIRE ANY OPERATIONS AND MAINTENANCE ACTIVITIES. THE DEPARTMENT, OF COURSE, WILL ENTER INTO A CONTRACT TO PROVIDE 10 PERCENT OF THE COST OF THE PROJECT.

THIS SITE HAS BEEN A MAJOR CONCERN FOR THE PEOPLE OF LOCK HAVEN FOR MANY YEARS AND I KNOW THAT IT WILL CONTINUE TO BE A HIGH PRIORITY SITE FOR BOTH THE DEPARTMENT AND EPA. THIS PHASE II CONSTRUCTION PROJECT WILL BE A MAJOR STEP IN THE PROCESS OF SUCCESSFULLY COMPLETING A PERMANENT CLEANUP OF THE SITE. I CAN ASSURE YOU THAT THE DEPARTMENT WILL CONTINUE TO COOPERATE IN ANY WAY POSSIBLE IN ORDER TO EXPEDITE THE CLEANUP OF THIS SITE. IF YOU HAVE ANY QUESTIONS REGARDING THIS MATTER, PLEASE DO NOT HESITATE TO CONTACT ME.

SINCERELY,

JAMES P. SNYDER, ASSISTANT DIRECTOR.

#RS

RESPONSIVENESS SUMMARY
DRAKE CHEMICAL SITE
LOCK HAVEN, PENNSYLVANIA

THIS COMMUNITY RELATIONS RESPONSIVENESS SUMMARY IS DIVIDED INTO THE FOLLOWING SECTIONS:

SECTION I	OVERVIEW. A DISCUSSION OF THE EPA'S PREFERRED ALTERNATIVE AND THE PUBLIC'S EXPECTED RESPONSE TO THIS ALTERNATIVE.
SECTION II	BACKGROUND OF COMMUNITY INVOLVEMENT AND CONCERNS. A DISCUSSION OF THE HISTORY OF COMMUNITY INTEREST AND CONCERNS RAISED DURING THE REMEDIAL PLANNING ACTIVITIES AT THE DRAKE CHEMICAL SITE.
SECTION III	SUMMARY OF MAJOR COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES. A SUMMARY OF COMMENTS AND RESPONSES CATEGORIZED BY TOPIC.
SECTION IV	REMAINING CONCERNS. A DISCUSSION OF COMMUNITY CONCERNS THAT THE EPA AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES (PADER) SHOULD CONSIDER IN THE REMEDIAL DESIGN AND CONSTRUCTION PHASES AT THE DRAKE CHEMICAL SITE.

I. OVERVIEW

AT THE TIME OF THE PUBLIC COMMENT PERIOD, THE EPA HAD IDENTIFIED A PREFERRED ALTERNATIVE FOR PHASE II REMEDIATION OF THE DRAKE CHEMICAL SITE. ALTHOUGH THE AGENCY EXPRESSED A PREFERENCE, IT PRESENTED A TOTAL OF FIVE REMEDIAL ACTION ALTERNATIVES IN THE DRAFT FEASIBILITY STUDY REPORT. THE PREFERRED ALTERNATIVE, REFERRED TO AS ALTERNATIVE 2, CONSISTS OF THE REMOVAL OF ALL TANKS, BUILDINGS, AND DEBRIS; DRAINAGE AND REMOVAL OF THE LINED LAGOONS; REMOVAL AND INCINERATION OF THE CHEMICALS IN THE ONSITE WAREHOUSE; DECONTAMINATION OF METALS AND REMOVAL FROM THE SITE AS SCRAP; AND DISPOSAL OF ALL CONTAMINATED MATERIALS IN AN OFFSITE, RCRA-PERMITTED, SECURE LANDFILL.

COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD INDICATE THAT RESIDENTS AND LOCAL OFFICIALS, AS WELL AS THE PADER, STRONGLY SUPPORT ALTERNATIVE 2. COMMENTS ALSO SHOWED THAT THE COMMUNITY AND COMMUNITY OFFICIALS VEHEMENTLY OPPOSE ALTERNATIVE 4 WHICH PROVIDES FOR CONSTRUCTION OF A NEW LANDFILL ON LAND ADJACENT TO THE DRAKE CHEMICAL SITE AND PRESENTLY LOCATED WITHIN A FLOOD PLAIN.

II. BACKGROUND OF COMMUNITY INVOLVEMENT AND COMMENTS

COMMUNITY INTEREST IN THE DRAKE CHEMICAL SITE WAS ORIGINALLY ATTRACTED BY FIRES AT THE SITE DATING BACK TO THE 1960S. FLOODING OF THE SITE ALSO RAISED CONCERN IN THE COMMUNITY THAT HAZARDOUS SUBSTANCES FROM THE SITE MIGHT SPREAD THROUGHOUT THE TOWN. DURING EMERGENCY ACTIONS AT THE SITE IN MARCH OF 1982, ACID MIST CLOUDS ESCAPED FROM THE SITE AND CAUSED PROBLEMS RANGING FROM PEELING PAINT ON VEHICLES TO RESPIRATORY IRRITATIONS. THE CLEANUP CONTRACTOR HAD TO SET UP AN INSURANCE PROGRAM TO HANDLE THE NUMEROUS CLAIMS THAT RESULTED.

IN APRIL 1983, THE RURAL DEVELOPMENT COMMITTEE, A GROUP ESTABLISHED IN 1982 BY REPRESENTATIVES OF LOCAL AGENCIES INTERESTED IN FURTHERING RURAL DEVELOPMENT, SENT A LIST OF THEIR CONCERNS ABOUT THE DRAKE CHEMICAL SITE TO THE EPA, GOVERNMENT OFFICIALS, AND THE MEDIA. THEY REQUESTED THAT THEIR CONCERNS BE ADDRESSED AT THE NEXT SCHEDULED PUBLIC MEETING.

A SECOND CITIZENS' GROUP WAS FORMED IN APRIL 1983. CALLED CLEAN (CITIZENS AND LABORERS FOR ENVIRONMENTAL ACTION NOW), THE GROUP WAS COMPOSED OF FORMER SITE WORKERS AND INTERESTED CITIZENS. ITS AIM WAS TO SECURE HEALTH SCREENING FOR FORMER DRAKE CHEMICAL COMPANY EMPLOYEES.

AT A PUBLIC MEETING HELD IN MAY 1983, THE PRIMARY CONCERNS OF THE 250 PEOPLE WHO ATTENDED WERE HEALTH RELATED. HOWEVER, INTEREST HAS DWINDLED SINCE THAT TIME, PERHAPS BECAUSE OF PHASE I PROGRESS. AT THE LATEST PUBLIC MEETING, HELD APRIL 3, 1986 TO DISCUSS THE FEASIBILITY STUDY FOR PHASE II, LESS THAN 30 COMMUNITY MEMBERS ATTENDED. NONE OF THESE INDIVIDUALS VOICED CONCERN ABOUT HEALTH ISSUES. NO REPRESENTATIVES OF THE RURAL DEVELOPMENT COMMITTEE OR CLEAN ATTENDED. THE PRIMARY CONCERNS AT THIS MEETING INCLUDED METHODS OF DECONTAMINATION, OFFSITE DISPOSAL, THE REMEDIAL ACTION TIME-FRAME, AND THE SHORTCOMINGS OF ALTERNATIVE 4.

III. SUMMARY OF PUBLIC COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

COMMENTS RECEIVED DURING THE DRAKE CHEMICAL SITE PUBLIC COMMENT PERIOD ARE SUMMARIZED IN THIS SECTION. THE COMMENT PERIOD OPENED ON MARCH 27, 1986 AND CONCLUDED APRIL 17. ALTHOUGH THE EPA PRESENTED FIVE REMEDIAL ACTION ALTERNATIVES FOR CONSIDERATION, THE AGENCY EXPRESSED A PREFERENCE FOR ALTERNATIVE 2. THIS ALTERNATIVE WAS ALSO PREFERRED BY THE PADER.

REMEDIAL ALTERNATIVES

1. SEVERAL PEOPLE SPOKE AGAINST ALTERNATIVE 4. THEY WERE CONCERNED THAT THE PROPOSED LOCATION OF A NEW LANDFILL ON PROPERTY ADJACENT TO THE SITE, BETWEEN ROUTE 220 AND THE RAILROAD EMBANKMENT, LIES WITHIN A FLOOD PLAIN. THIS LOCATION WOULD MOVE THE CONTAMINANTS 200 OR 300 YARDS CLOSER TO BALD EAGLE CREEK, CREATING A SITUATION THAT THE COMMUNITY PERCEIVES AS AN INCREASED RISK.

EPA RESPONSE: THE NATIONAL CONTINGENCY PLAN (NCP) REQUIRES THAT THE COST AND TECHNICAL FEASIBILITY OF ONSITE TREATMENT AND DISPOSAL BE EVALUATED, IF REMEDIAL ALTERNATIVES THAT INCLUDE OFFSITE DISPOSAL ARE PROPOSED. ORIGINALLY, BUILDING AND SLUDGE REMEDIATION WERE PART OF PHASE II, AND THE EPA INTENDED TO PROPOSE DISMANTLING THE BUILDINGS, SPREADING THEM ON THE GROUND, AND CAPPING THE SLUDGE AND THE BUILDINGS TOGETHER. HOWEVER, SLUDGE REMEDIATION HAS BEEN SEPARATED INTO A THIRD PHASE, AND IT IS NO LONGER POSSIBLE TO DISPOSE OF THE STRUCTURES ON SITE. SINCE THAT OPTION IS NOT AVAILABLE, THE NEXT OPTION IS TO ACQUIRE LAND AS CLOSE TO THE SITE AS POSSIBLE. THE PLANS ARE ONLY CONCEPTUAL NOW, BUT THE LAND OWNED BY CASTANEA TOWNSHIP AND LOCATED BETWEEN ROUTE 220 AND THE RAILROAD EMBANKMENT IS THE PROPOSED LANDFILL SITE.

THE LANDFILL WOULD BE BUILT ONLY TO A CAPACITY THAT WOULD HANDLE THE BUILDING MATERIALS, AND IT WOULD BE AN ELEVATED, LINED, FEDERALLY-APPROVED FACILITY. THE CONTAMINANTS WOULD NOT BE BURIED IN THE GROUND BECAUSE THE GROUNDWATER IS TOO HIGH IN THIS AREA. THE LANDFILL WOULD BE CAPPED ACCORDING TO RESOURCE CONVERSATION AND RECOVERY ACT (RCRA) REGULATIONS, AND THEN, TO PROTECT IT FROM FLOODING, A DIKE AND LEVEE SYSTEM WOULD HAVE TO BE BUILT AROUND THE FACILITY. THERE IS A FLOOD PROTECTION SYSTEM PROPOSED BY THE U.S. ARMY CORPS OF ENGINEERS FOR CONSTRUCTION SOMETIME IN 1988, BUT WE CANNOT ASSUME CONSTRUCTION OF THIS SYSTEM. THERE ARE MANY ADMINISTRATIVE CONCERNS WITH THIS ALTERNATIVE; HOWEVER, IT IS THE LEAST EXPENSIVE OPTION.

2. A LOCAL OFFICIAL SUGGESTED THAT HAVING SATISFIED THE NCP BY PRESENTING ALTERNATIVE 4, EPA SHOULD "SCRAP ALTERNATIVE 4 FROM THE RECORD.". HE ASKED THAT IT BE MADE PART OF THE RECORD THAT IMPLEMENTATION OF ALTERNATIVE 4 WOULD BE MET WITH "MILITANT RESISTANCE.". THIS STATEMENT WAS SUPPORTED BY OTHER PUBLIC MEETING PARTICIPANTS.

EPA RESPONSE: EPA IS GOING TO PRESENT ALTERNATIVE 2 TO THE REGIONAL ADMINISTRATOR AS THE PREFERRED ALTERNATIVE, UNLESS THERE IS ADVERSE PUBLIC COMMENT ON ALTERNATIVE 2. IF NO STRONG SUPPORT FOR ALTERNATIVE 4 DEVELOPS, IT IS UNLIKELY TO BE SELECTED.

3. CITIZENS AND OFFICIALS INQUIRED WHETHER ALTERNATIVE 5, THE NO-ACTION ALTERNATIVE, MIGHT BE SELECTED.

EPA RESPONSE: THE SELECTION OF ALTERNATIVE 5 IS AN UNLIKELY POSSIBILITY. IF IT IS CHOSEN, ACTION ON THE BUILDINGS AND STRUCTURES WILL, MOST LIKELY, REVERT BACK TO PHASE III.

QUESTIONS ABOUT PROJECT PHASES

1. OFFICIALS REQUESTED A SUMMARY OF REMEDIAL ACTIONS AND THE TIME FRAME FOR PHASE I AT THE DRAKE CHEMICAL SITE. INTEREST WAS PRIMARILY FOCUSED ON THE LEACHATE STREAM REMEDIATION (PHASE I).

EPA RESPONSE: PHASE I IS INTENDED TO ELIMINATE DIRECT CONTACT WITH THE LEACHATE STREAM. THE STREAM IS CAUSED BY CONTAMINATED GROUNDWATER THAT COMES UP IN LOW-LYING AREAS ACCORDING TO FLUCTUATIONS OF THE WATER TABLE. THERE IS SOME SEEPAGE THROUGH THE RAILROAD EMBANKMENT. EPA PLANS TO ELIMINATE THIS SEEPAGE BY INSTALLING A FRENCH DRAIN SYSTEM THAT WILL DRAIN THE PERCHED AQUIFER INTO THE REGIONAL AQUIFER. THE PIPE THAT COMES OUT OF THE RAILROAD EMBANKMENT WILL BE SEALED AND THE UPPER HALF OF THE LEACHATE STREAM, ABOVE PINE STREET, WILL BE FILLED IN, CONTOURED TO THE SURROUNDING LAND, AND CAPPED WITH CLAY. CLEAN SURFACE WATER FLOW IN THAT AREA WILL BE FACILITATED BY A PIPE THAT RUNS FROM PINE STREET THROUGH THE ROUTE 220 CULVERT AND INTO BALD EAGLE CREEK. ONCE THE GROUNDWATER CANNOT SURFACE IN THE LOW-LYING AREAS, IT WILL RETAIN THE COURSE INTO THE NORMAL AQUIFER FLOW. SOME SEDIMENTS WILL HAVE TO BE EXCAVATED TO INSTALL THE PIPE BELOW ROUTE 220, AND SINCE THE SEDIMENTS ARE PARTIALLY CONTAMINATED, THEY WILL BE PLACED IN A TEMPORARY SURFACE IMPOUNDMENT THAT WILL BE CONSTRUCTED ON THE DRAKE CHEMICAL SITE. THE IMPOUNDMENT WILL BE DEALT WITH IN PHASE III.

DESIGN OF PHASE I IS COMPLETE. BID OPENING IS SCHEDULED FOR MAY 6, 1986. ONCE THE CORPS OF ENGINEERS IS SATISFIED THAT THE LOW BIDDER IS RESPONSIBLE, THAT CONTRACTOR WILL BE GIVEN NOTICE TO PROCEED. IF NO PROBLEMS ARISE, WORK SHOULD START IN LATE MAY OR EARLY JUNE AND SHOULD TAKE ABOUT TWO OR THREE MONTHS.

2. SEVERAL QUESTIONS WERE ASKED ABOUT PHASE II. MOST OF THESE WERE ABOUT THE DURATION OF THE PROJECT, THE EXPECTED IMPLEMENTATION SCHEDULE, AND WHETHER THE COSTS QUOTED IN THE FACT SHEET AND THE FEASIBILITY STUDY INCLUDED DESIGN AND CONSTRUCTION.

EPA RESPONSE: IT IS DIFFICULT TO ATTACH A DATE TO PHASE II BECAUSE SUPERFUND AUTHORIZATION RAN OUT ON OCTOBER 1, 1985, AND THE INCREMENTAL FUNDING CONGRESS PROVIDED HAS BEEN COMMITTED TO SITES THAT HAVE ALREADY HAD RECORDS OF DECISION (RODS) SIGNED. ANY NEW ROD SITES WILL HAVE TO WAIT FOR FUNDING. EPA WANTS TO GET THE DRAKE CHEMICAL SITE ROD SIGNED NOW SO THAT AS SOON AS THE MONEY IS AVAILABLE, FUNDS CAN BE OBLIGATED FOR PHASE II.

ONCE A CONTRACTOR IS SELECTED AND MONEY IS AVAILABLE, THE EPA ESTIMATES THE IMPLEMENTATION OF PHASE II WILL TAKE SIX MONTHS. THERE SHOULDN'T BE ANY HIDDEN VARIABLES ASSOCIATED WITH THIS PROJECT.

AT WORST, THE EPA ANTICIPATES A NEW SUPERFUND BILL BY THE BEGINNING OF THE NEW FISCAL YEAR. THIS IS AN ASSUMPTION. THE IMPLEMENTATION OF PHASE II WOULD THEN OCCUR IN THE SPRING OF 1987. THE PROJECT WILL PROBABLY CONTINUE THROUGH THE ENTIRE 1987 CONSTRUCTION PERIOD. DESIGN AND CONSTRUCTION COSTS ARE INCLUDED IN FIGURES QUOTED IN THE FEASIBILITY STUDY.

3. CONCERN WAS EXPRESSED THAT THE DRAKE CHEMICAL SITE, PHASE II, MIGHT NOT BE A HIGH ENOUGH PRIORITY TO BE FUNDED AS SOON AS MONIES ARE MADE AVAILABLE.

EPA RESPONSE: WHEN THE SUPERFUND BILL IS PASSED, MONEY CAN BE APPROPRIATED IF THE ROD IS SIGNED.

4. THE TOWN OF LOCK HAVEN IS ON SCHEDULE WITH ITS PLANS FOR THE CONSTRUCTION OF A DIKE-LEVEE SYSTEM AND EXPECTS TO BEGIN CONSTRUCTION BY MID-1988. SINCE SUPERFUND HAS NOT BEEN REAUTHORIZED, IT APPEARS THAT THE EPA CLEANUP AT DRAKE MAY EXCEED THIS SCHEDULE.

EPA RESPONSE: EPA EXPECTS THAT PHASE II WILL BE UNDER WAY BEFORE 1988, BUT AS FAR AS PHASE III IS CONCERNED, THAT MAY BE CORRECT. PHASE III IS THE MOST COMPLEX PHASE. THERE ARE MANY ISSUES TO RESOLVE, AND THE EPA WANTS TO BE CONSISTENT WITH THE CLOSURE AT AMERICAN COLOR & CHEMICAL (AC&C). PHASE III MAY TAKE AWHILE, BUT PHASE II IS AN OPPORTUNITY TO DO SOME COSMETIC WORK. THE BUILDINGS ARE AN EYESORE, AND PEOPLE WANT THEM REMOVED. EPA HOPES TO BEGIN WORK SOON.

<u>DECONTAMINATION AND SALVAGE</u>

1. SEVERAL QUESTIONS CONCERNED DECONTAMINATION OF METALS. CITIZENS WANTED TO KNOW WHAT THE DECONTAMINATION PROCESS INVOLVES, HOW DECONTAMINATION OF METALS IS DETERMINED, AND WHY ALTERNATIVE 2, WITH DECONTAMINATION REQUIRED, WAS CHEAPER THAN ALTERNATIVE 1, WHICH CALLED FOR REMOVAL OF ALL WASTES AND CONTAMINATED STRUCTURES TO A RCRA PERMITTED LANDFILL.

EPA RESPONSE: THE DECONTAMINATION PROCESS INVOLVES SPRAYING THE METALS WITH A LOW VOLUME, HIGH PRESSURE SPRAY. THIS IS DONE ON A DECONTAMINATION PAD, AND THE FLOW FROM THE SPRAY IS COLLECTED IN A SUMP AND PUT INTO A TANK. IT IS THEN TESTED, AND IF IT IS FOUND TO BE CONTAMINATED, IT GOES TO A RCRA-PERMITTED TREATMENT FACILITY. AFTER BEING DECONTAMINATED, THE METALS ARE WIPE SAMPLED. THIS IS IN THE PREFERRED ALTERNATIVE ONLY. IF THE METALS ARE DETERMINED TO BE DECONTAMINATED, THEY CAN BE SOLD AS SCRAP.

DECONTAMINATION OF THE METALS ELIMINATES A LOT OF TONNAGE THAT WOULD, IN ALTERNATIVE 1, HAVE TO BE HAULED SEVERAL HUNDREDS OF MILES TO A LANDFILL. AT THE LANDFILL, THE PRICE WILL BE BASED ON VOLUME.

2. THE QUANTITY OF CHEMICALS LEFT IN THE WAREHOUSE AND THE SALVAGE VALUE OF THOSE CHEMICALS WAS REQUESTED. ALSO, INQUIRIES WERE MADE ABOUT SALVAGEABLE EQUIPMENT THAT MIGHT REMAIN ON SITE.

EPA RESPONSE: THE CHEMICALS IN THE WAREHOUSE ARE NOT WASTE CHEMICALS BUT WERE USED IN THE PRODUCT BEING MANUFACTURED; HOWEVER, EPA IS NOT GOING TO EVALUATE THE SALVAGE VALUE OF THESE MATERIALS AT THIS POINT. THEY WILL BE TREATED AS WASTE MATERIALS SINCE THEY HAVE BEEN SITTING FOR 5 YEARS, AND THEY WILL BE INCINERATED.

EQUIPMENT REMAINING IN THE BUILDING HAS ALSO BEEN SITTING IDLE FOR YEARS; THE ROOFS OF THE BUILDINGS ARE CAVING IN, AND THE ELEMENTS HAVE PROBABLY DAMAGED WHATEVER REMAINS. IT MAY COST MORE TO SALVAGE THAT EQUIPMENT THAN TO BUY NEW EQUIPMENT. HOWEVER, AS THE WORK PROGRESSES SALVAGEABLE ITEMS MAY BE DISCOVERED, AND DECISIONS WILL BE MADE AT THAT POINT, ESPECIALLY IN THE CASE OF THE WAREHOUSE AND WATER TREATMENT BUILDINGS WHICH ARE LESS CONTAMINATED.

3. SEVERAL QUESTIONS ADDRESSED THE DECONTAMINATION OF BUILDING MATERIALS OTHER THAN METALS. IT WAS SUGGESTED THAT SOME SORT OF CORE SAMPLING MAY BE PREFERABLE TO WIPE SAMPLING FOR BRICKS AND WOOD. ONE PERSON EXPRESSED CONCERN THAT BRICKS MIGHT GO TO A MUNICIPAL LANDFILL. HE MENTIONED THAT A HEALTH STUDY REPORTEDLY FOUND BETA-NAPHTHYLAMINE LEACHING OUT OF CONTAMINATED BRICKS AND WOOD.

EPA RESPONSE: THERE ARE NO PLANS TO DECONTAMINATE BRICKS OR WOOD AT THIS TIME. IN ALTERNATIVE 2, THE EPA WILL ASSUME ALL BRICKS AND WOOD ARE CONTAMINATED, AND THEY WILL BE DISPOSED AT A RCRA - PERMITTED LANDFILL. IF ALTERNATIVE 3 IS CHOSEN, THERE ARE METHODS TO SAMPLE THESE MATERIALS TO BE SURE THEY ARE NOT CONTAMINATED BEFORE SENDING THEM TO A MUNICIPAL LANDFILL.

4. CONCERN WAS EXPRESSED THAT SALVAGED METALS MIGHT BE SOLD TO BUYERS WHO ARE UNAWARE OF THE ORIGIN OF THE METALS.

EPA RESPONSE: THE EPA DOES NOT WANT THESE DECONTAMINATED METALS TO BE SOLD AND USED FOR THE SAME PURPOSES THEY FORMERLY SERVED. THE EPA WANTS THESE THINGS TO BE RECYCLED IN ANOTHER FORM. PROBABLY, THE METALS WILL BE SOLD AS SCRAP AND MELTED DOWN. THE BUYERS WILL BE INFORMED ABOUT THE ORIGIN OF THE METALS AND THE DECONTAMINATION PROCESS.

DISPOSAL AND LAGOON CONCERNS

1. SEVERAL QUESTIONS WERE RAISED REGARDING THE LINED LAGOONS ON SITE. CITIZENS ASKED IF THE EPA INTENDED TO DRAIN THE LAGOONS AND IF THE CONTENTS OF THE LAGOONS WERE KNOWN. ONE WOMAN REPORTED THAT HER SON, A FORMER DRAKE EMPLOYEE, TOLD HER THAT BARRELS CONTAINING BOTH LIQUIDS AND SOLIDS WERE DUMPED INTO THE LAGOONS. SHE WAS CONCERNED THAT THE LAGOON CONTENTS MIGHT BE UNSTABLE AND ALSO THAT THE BARRELS MIGHT BE ALLOWED TO REMAIN IN THE LAGOONS AND SIMPLY BE COVERED OVER IN PHASE III.

EPA RESPONSE: THERE ARE TWO LINED LAGOONS ON SITE THAT WERE INSTALLED IN THE LATE 1970S TO TREAT EFFLUENT FROM THE DRAKE FACILITY. THERE IS STILL SOME LIQUID IN THOSE LAGOONS, DEPENDENT UPON EVAPORATION AND PRECIPITATION. ANY REMAINING LIQUID WILL BE PUMPED INTO A TANK AND SENT TO A RCRA LANDFILL. WE TESTED THE LAGOONS, AND WE DO HAVE A CHEMICAL ANALYSIS OF THEM.

THERE IS A LIQUID LAGOON ON SITE THAT WILL BE DEALT WITH IN PHASE III. ALSO REMAINING UNTIL PHASE III IS AN INTERMITTENT LAGOON THAT OCCASIONALLY DRIES UP. THE LAGOON THAT THE BARRELS WERE THROWN INTO IS PROBABLY ON THE EASTERN SIDE OF THE SITE. THE EPA HAS BEEN TOLD THAT BARRELS WERE THROWN INTO THAT LAGOON. ONE ALTERNATIVE WOULD BE TO LEAVE THE SLUDGE LAGOONS INTACT AND CAP THEM; HOWEVER, THE EPA DOES NOT WANT TO SPECULATE ABOUT PHASE III AT THIS TIME.

2. A CITIZEN ASKED IF THE SOILS AROUND THE LINED LAGOONS HAD BEEN TESTED AND IF THE LAGOONS WERE LEAKING. THE INFERENCE WAS THAT THE CHEMICALS IN THE LAGOONS MAY HAVE CAUSED ANY LEAKS THAT WERE OCCURRING AND THAT IT WAS THEREFORE UNWISE TO PLACE THOSE SAME CHEMICALS INTO A LINED LANDFILL.

EPA RESPONSE: THESE LAGOONS ARE ELEVATED SO SAMPLES WERE TAKEN OF THE EMBANKMENTS. ANYTHING OUTSIDE THE EMBANKMENTS WILL BECOME PART OF PHASE III. IN PHASE II THE EPA WILL DRAIN THE LIQUIDS, REMOVE THE LAGOON LINERS, AND POSSIBLY LEVEL THE EMBANKMENTS.

AT THIS TIME, IT IS NOT KNOWN WHETHER THE LAGOONS ARE LEAKING, BUT IT SEEMS PROBABLE. HOWEVER, LINED LANDFILL REGULATIONS ARE NOW COMPLETELY DIFFERENT THAN WHEN THIS SITE WAS LINED. THE NEW LANDFILL LINERS ARE DOUBLE, THEY HAVE NEW PROTECTION SYSTEMS, AND THEY ARE MONITORED. FURTHERMORE, LIQUID WASTES WILL NOT BE SENT TO A LANDFILL; THEY WILL BE SENT TO A TREATMENT FACILITY.

3. INQUIRIES WERE MADE ABOUT THE TYPES OF LANDFILLS THAT WOULD BE USED FOR OFFSITE DISPOSAL AND ABOUT THE SPECIFIC NAMES AND LOCATIONS OF THE LANDFILLS THE EPA INTENDS TO USE.

EPA RESPONSE: AT THIS TIME, THE EPA IS NOT TALKING ABOUT A SPECIFIC LANDFILL. IF THE PREFERRED ALTERNATIVE IS CHOSEN, MATERIALS WILL BE HAULED TO A RCRA-PERMITTED LANDFILL. THERE ARE 2 OR 3 RCRA LANDFILLS TO HANDLE THE ENTIRE NORTHEAST. THESE LANDFILLS ARE SECURED, HAZARDOUS WASTE FACILITIES. THEY ARE GOVERNED BY THE RESOURCE CONSERVATION AND RECOVERY ACT, A FEDERAL LAW THAT REGULATES HAZARDOUS WASTE LANDFILLS AND PRESCRIBES CERTAIN TYPES OF LINERS AND MONITORING SYSTEMS.

IN ALTERNATIVE 3, DISPOSAL WILL BE IN APPROPRIATE FACILITIES DEPENDENT UPON THE AMOUNT OF CONTAMINATION IN THE WASTE MATERIALS. THIS MEANS THAT MATERIALS FOUND TO BE CONTAMINATED WILL GO TO A RCRA-PERMITTED FACILITY AND MATERIALS SHOWN TO BE UNCONTAMINATED WILL BE SENT TO A SUBTITLE B MUNICIPAL LANDFILL. BASED ON LEVEL OF CONTAMINATION MUCH WOULD PROBABLY GO TO AN UNLINED, STATE-PERMITTED FACILITY THAT PROVIDES LEACHATE COLLECTION AND TREATMENT.

COMMENTS RELATED TO PROPOSED DIKE/LEVEE SYSTEM

1. A REPRESENTATIVE OF THE LOCAL FLOOD CONTROL BOARD EXPRESSED RELIEF THAT ALTERNATIVE 4 WAS NOT PREFERRED AND CALLED ATTENTION TO THE FACT THAT THE LEVEL OF PROTECTION FOR THE FLOOD CONTROL PROJECT HAD BEEN CHANGED FROM 500-YEAR PROTECTION TO 200-YEAR PROTECTION.

HE THEN INQUIRED ABOUT THE LIABILITY OF THE ARMY CORPS OF ENGINEERS FOR ANY IMPACT THEIR FLOOD CONTROL

MEASURES MIGHT HAVE ON THE EPA PHASE I REMEDIAL MEASURES. HE ALSO REQUESTED ASSURANCES THAT THE PHASE I PLAN TO CAP THE LEACHATE STREAM WILL NOT BE AFFECTED BY PONDING IN THE AREA. A RESIDENT INQUIRED ABOUT THE CORPS OF ENGINEERS' FEELINGS TOWARD ALTERNATIVE 4.

EPA RESPONSE: THE CORPS WILL INCUR LIABILITY IF IT DISTURBS BURIED CONTAMINANTS; IN THAT CASE THE CORPS WOULD BE CONSIDERED THE GENERATOR AND WOULD BE HELD RESPONSIBLE. THE EPA MET WITH THE DESIGN ENGINEER FOR THE CORPS LAST YEAR IN BALTIMORE AND EXCHANGED CONCEPTUAL PLANS. THE ONLY REMAINING CONCERN IS WITH THE

BACKWATER FLAP ON THE CULVERT. THERE MAY BE A NEED TO INSTALL A CONCRETE STRUCTURE IN ORDER TO PUT THAT FLAP OVER IT. THERE WILL BE ANOTHER MEETING BETWEEN THE EPA AND THE CORPS TO DISCUSS THE LOCATION OF THIS BACKWATER VALVE AND HOW DEEPLY IT WILL PENETRATE THE CAP. THE EPA WANTS TO BE SURE THAT WHATEVER IS DUG INTO THAT AREA IS PROPERLY SHORED.

THE PONDING AREA'S IMPACT ON THE PHASE I CAP WAS ALSO DISCUSSED WITH THE CORPS AT THE BALTIMORE MEETING. THERE WAS CONCERN THAT THE BUILDUP OF HYDRAULIC HEAD IN THAT AREA MIGHT POP THE CAP, BUT APPARENTLY THE ENGINEERS ARE SATISFIED THAT PONDING WILL NOT AFFECT IT. THE CORPS HAS NOT COMMENTED ON ALTERNATIVE 4.

2. A REPRESENTATIVE OF THE FLOOD CONTROL BOARD ASKED IF THE EPA PLANNED TO PREPARE A DIVISION-OF-COSTS STATEMENT CONCERNING THE DEGREE OF PROTECTION PROVIDED TO THE SITE BY THE LEVEE AND THE RESULTING REDUCTION IN THE COST OF REMEDIAL ACTIONS AT THE SITE. HE STATED THAT THIS INFORMATION MIGHT RAISE THE COST-BENEFIT RATIO OF THE DIKE-LEVEE SYSTEM SINCE THE COST OF CONSTRUCTION REMAINS THE SAME, BUT THE BENEFIT OF REMOVING THE DRAKE CHEMICAL SITE FROM THE FLOOD PLAIN IS GREATER.

EPA RESPONSE: THE EPA HAS NO PLANS TO DO THIS AT THIS TIME.

COSTS AND FUNDING

1. EPA REPRESENTATIVES EXPLAINED THE PRESENT LACK OF FUNDING FOR PHASE II AND THE EXPECTED SEQUENCE OF EVENTS BEFORE NEW FUNDS ARE MADE AVAILABLE AS PART OF THEIR PRESENTATION. THIS INFORMATION WAS APPARENTLY WELL RECEIVED BECAUSE LITTLE INFORMATION WAS REQUESTED. ONE PERSON REQUESTED INFORMATION ABOUT THE AMOUNT OF MONEY SPENT OR EXPECTED TO BE SPENT AT DRAKE CHEMICAL.

EPA RESPONSE: THE PHASE I LEACHATE-STREAM CONSTRUCTION WILL COST APPROXIMATELY 1.2 MILLION DOLLARS; PHASE II WILL COST ABOUT 3.4 MILLION DOLLARS, AND PHASE III COULD RANGE FROM 5 MILLION DOLLARS TO 30 MILLION DOLLARS. EMERGENCY ACTION AT THE SITE COST A LITTLE OVER A MILLION DOLLARS; AND THE REMEDIAL INVESTIGATION COST ABOUT 750 THOUSAND DOLLARS. THERE WAS ALSO A LEACHATE STREAM STUDY PERFORMED BY THE EMERGENCY RESPONSE TEAM (ERT) PRIOR TO THE EMERGENCY CLEANUP IN 1982.

MISCELLANEOUS CONCERNS

1. LOCAL OFFICIALS EXPRESSED CONCERN THAT ACTIVITIES AT THE DRAKE CHEMICAL SITE MIGHT HAVE A NEGATIVE EFFECT ON SUMMER EVENTS PLANNED FOR THE COMMUNITY. THESE ACTIVITIES INCLUDED A WEEK-LONG EVENT CALLED A FLY-IN AT THE PIPER FIELD IN JULY AND A 4-DAY PERIOD AT THE LABOR DAY WEEKEND.

EPA RESPONSE: THE EPA REQUESTED THE DATES OF THESE ACTIVITIES SO THAT ANY NEGATIVE EFFECT OF SITE ACTIVITIES ON THE COMMUNITY'S FESTIVITIES COULD BE AVOIDED.

2. LOCAL OFFICIALS INQUIRED IF IT WAS NECESSARY TO SUBMIT A WRITTEN COMMENT TO THE EPA REGARDING REMEDIAL ALTERNATIVES OR IF NO COMMENT WOULD BE INTERPRETED AS AGREEMENT WITH ALTERNATIVE 2.

EPA RESPONSE: THE EPA DOES NOT REQUIRE WRITTEN COMMENTS. IT WILL ASSUME AGREEMENT WITH THE PREFERRED ALTERNATIVE. HOWEVER, IF OFFICIALS DO WRITE THAT THEY SUPPORT THE PREFERRED ALTERNATIVE, IT GIVES THAT MUCH MORE CREDENCE TO THAT ALTERNATIVE WHEN IT IS PRESENTED TO THE REGIONAL ADMINISTRATOR.

3. A PUBLIC OFFICIAL'S AIDE SAID THAT HE WAS PROMISED A COPY OF THE FEASIBILITY STUDY BY A REPRESENTATIVE OF THE EPA.

EPA RESPONSE: GENERALLY SEVERAL COPIES OF THE REPORT ARE SENT TO DIFFERENT LOCATIONS IN THE COMMUNITY SO THAT EVERYONE HAS ACCESS TO THEM, BUT ANYONE WANTING A PERSONAL COPY MAY CONTACT THE EPA.

IV. REMAINING CONCERNS

IN GENERAL, THE COMMUNITY SEEMED TO BE IN COMPLETE AGREEMENT WITH THE EPA'S RECOMMENDATION OF ALTERNATIVE 2, AND THEY DID NOT APPEAR TO BE ALARMED ABOUT THE PRESENT LACK OF FUNDING. THE REMAINING CONCERN OF LOCAL RESIDENTS AND OFFICIALS REGARDS FUTURE DEVELOPMENT IN THE DRAKE CHEMICAL SITE VICINITY.

1. TO THE WEST OF THE DRAKE CHEMICAL SITE, HAMMERMILL IS CONSIDERING BUILDING A WASTE-ENERGY PLANT. ACCESS TO THE PLANT WILL PROBABLY HAVE TO CROSS THE LEACHATE STREAM CAP.

EPA RESPONSE: THE EPA CANNOT STOP HAMMERMILL FROM BUILDING THERE. BUT HAMMERMILL WILL HAVE TO KEEP IN MIND THAT THE AREA WILL BE CONTOURED FOR SURFACE WATER FLOW. ANY CONSTRUCTION METHODS EMPLOYED WILL HAVE TO FACILITATE THAT FLOW AND KEEP IT MOVING TOWARD CATCH BASINS THAT GO INTO THE NEW PIPE. AN ACCESS ROAD WILL ALSO HAVE TO BE CONSTRUCTED SO THAT SURFACE WATER FLOW IS NOT IMPEDED.

THE EPA SPOKESMAN SUMMARIZED THE REASONS THAT THE AGENCY AND THE PADER PREFER ALTERNATIVE 2:

- IT SAVES NEEDED CAPACITY IN RCRA-PERMITTED LANDFILLS.
- FIELD DECISIONS ON DECONTAMINATION ARE MORE ACCURATE.
- ALL OF THE CONTAMINATED STRUCTURES ARE REMOVED.
- THE COST DIFFERENTIAL WITH OTHER ALTERNATIVES IS MINOR.
- IT SATISFIES THE NCP.

COMMUNITY RELATIONS SUPPORT ACTIVITIES DURING THE PHASE II FEASIBILITY STUDY AT THE DRAKE CHEMICAL SITE INCLUDED ISSUING PRESS RELEASES, UPDATING THE COMMUNITY RELATIONS PLAN, DISTRIBUTING A FACT SHEET, CONDUCTING A PUBLIC MEETING, SOLICITING PUBLIC COMMENTS, AND PREPARING THIS RESPONSIVENESS SUMMARY.

TABLE 1

BUILDING SAMPLES
MAXIMUM CONCENTRATIONS OF BASE/NEUTRAL EXTRACTABLE ORGANICS (UG/G)
DRAKE CHEMICAL SITE

PARAMETER	MAXIMUM CONCENTRATION	BUILDING NUMBER
ANTHRACENE	LT 2 Q	1
BENZO(A)ANTHRACENE	42,000 Q	1
BENZO(A)PYRENE	6.5 Q	1
BENZO(B)FLUORANTHENE	14 Q	1
BENZO(GHI)PERYLENE	LT 5 Q	1
BENZO(K)FLUORANTHENE	14 Q	1
BIS(2-ETHYLHEXYL) PHTHALATE	78	2
BUTYL BENZYL PHTHALATE	9.9	2
CHRYSENE	25 Q	2
1,2-DICHLOROBENZENE	22,000 Q	1
1,3-DICHLOROBENZENE	27,000 Q	2
1,4-DICHLOROBENZENE	48 Q	1
DIMETHYL PHTHALATE	23 Q	1
DI-N-BUTYL PHTHALATE	LT 600 Q	OUTSIDE
DI-N-OCTYL PHTHALATE	LT 2	2
1,2-DIPHENYLHYDRAZINE	LT 4	2
FLUORANTHENE	11 Q	1
HEXACHLOROBENZENE	1,381	OUTSIDE
HEXACHLOROBUTADIENE	120 Q	OUTSIDE
HEXACHLOROCYCLOPENTADIENE	110,000 Q	2
HEXACHLOROETHANE	LT 2	OUTSIDE
INDENO(1,2,3-CD) PYRENE	LT 5 Q	1
ISOPHORONE	64 Q	OUTSIDE
NAPHTHALENE	2,000 Q	OUTSIDE
NITROBENZENE	1.5 Q	2
PHENANTHRENE	850 Q	OUTSIDE
PYRENE	8.4 Q	1
1,2,4-TRICHLOROBENZENE	2,705	OUTSIDE
ANILINE	61 Q	5
4-CHLOROANILINE	29,504	2
2-METHYLNAPHTHALENE	4,500 Q	OUTSIDE

UG/G: MICROGRAMS PER GRAM
Q: QUESTIONABLE ANALYSIS BASED ON RESULTS OF DATA VALIDATION
LT: LESS THAN
OUTSIDE: OUTSIDE TANK, EXTERIOR OF BUILDING, OR DEBRIS SURROUNDING BUILDING.

TABLE 2

BUILDING SAMPLES
MAXIMUM CONCENTRATIONS OF ACID EXTRACTABLE,
VOLATILE, AND PESTICIDE ORGANICS (UG/G)
DRAKE CHEMICAL SITE

PARAMETER	MAXIMUM CONCENTRATION	BUILDING NUMBER
2-CHLOROPHENOL	0.32 Q	2
2,4-DIMETHYLPHENOL	430,000 Q	OUTSIDE
PHENOL	LT 10,000 Q	OUTSIDE
BENZOIC ACID	300,000 Q	1
2-METHYLPHENOL	LT 10,000 Q	OUTSIDE
BENZENE	LT 2,500 Q	2
CHLOROBENZENE	32,130	OUTSIDE
CHLOROFORM	LT 2,500 Q	2
ETHYL BENZENE	LT 2,500 Q	2
METHYL CHLORIDE	35 Q	OUTSIDE
METHYLENE CHLORIDE	7,440 Q	OUTSIDE
1,1,2,2-TETRACHLOROETHANE	LT 0.005	2
TETRACHLOROETHYLENE	33 Q	OUTSIDE
TOLUENE	LT 2,500 Q	2
1,1,1-TRICHLOROETHANE	0.009	4
TRICHLOROETHYLENE	0.029	2
TRICHLOROFLUOROMETHANE	LT 5,000 Q	2
ACETONE	0.97	4
2-HEXANONE	0.031	2
4-METHYL-2-PENTANONE	0.024	2
XYLENES (TOTAL)	LT 2,500 Q	2
BETA-BHC	190 Q	2
GAMMA-BHC	62 Q	2
DELTA-BHC	140 Q	2
4,4'-DDT	200 Q	OUTSIDE
4,4'-DDE	5.1 Q	OUTSIDE
4,4'-DDD	100 Q	OUTSIDE
DIELDRIN	3.3 Q	OUTSIDE
ALPHA-ENDOSULFAN	67 Q	2
BETA-ENDOSULFAN	5.3 Q	OUTSIDE
PCB-1254	11 Q	2

UG/G: MICROGRAMS PER GRAM
LT: LESS THAN
Q: QUESTIONABLE ANALYSIS BASED ON RESULTS OF DATA VALIDATION
OUTSIDE: OUTSIDE TANK, EXTERIOR OF BUILDING, OR DEBRIS SURROUNDING BUILDING.

TABLE 3

LINED LAGOONS - AQUEOUS PHASE DATA
CONCENTRATION RANGES OF INORGANIC AND INDICATOR PARAMETERS
DRAKE CHEMICAL SITE

PARAMETER	ON SITE	FIELD BLANKS
ALUMINUM	6,000 - 6,810	LT 100
ANTIMONY	LT 20 - 118	LT 20
CADMIUM	4.2 - 7.0	5.8
CHLORIDE	776,000 - 1,170,000	LT 1,000
CHROMIUM	39 - 120	LT 10
CONDUCTIVITY	5,600 - 6,400	LT 5,000
COPPER	679 - 1,130	LT 50
CYANIDE	17 - 53	25
IRON	20,800 - 25,500	LT 50
LEAD	26 - 38	LT 5
MANGANESE	505 - 591	LT 10
MERCURY	0.7 - 1.1	0.3
NICKEL	60 - 122	LT 40
PH	2.3 - 2.4	NA
SULFATE	850,000 - 1,000,000	LT 5,000
ZINC	398 C - 429 C	32 C
FENAC	13,100 Q - 15,275 Q	ND
TOH	48,560 - 55,900	ND
TOC	3,000 - 255,000	LT 1,000

ALL ANALYSES EXPRESSED IN UG/L (MICROGRAMS PER LITER) EXCEPT
CONDUCTIVITY (UMHOS/CM) AND PH (UNITS)

LT: LESS THAN
C: CORRECTED FOR LAB BLANK
Q: QUESTIONABLE DATA BASED ON DATA VALIDATION
NA: NOT ANALYZED
TOH: TOTAL ORGANIC HALOGEN
TOC: TOTAL ORGANIC CARBON.

TABLE 4

LINED LAGOONS - AQUEOUS PHASE DATA
CONCENTRATION RANGES OF INORGANICS
DRAKE CHEMICAL SITE

PARAMETER	ON SITE	FIELD BLANKS
ACENAPHTHENE	ND - LT 4 Q	ND
BENZO(A)ANTHRACENE	ND - LT 1 Q	ND
BENZO(A)PYRENE	ND - LT 1 Q	ND
BIS(2-ETHYLHEXYL)PHTHALATE	ND - LT 1 Q	ND - 10.3
DI-N-BUTYL PHTHALATE	ND	ND - 13.4
DI-N-OCTYL PHTHALATE	ND	ND - 1.5
NAPHTHALENE	ND - 80 Q	ND
PHENANTHRENE	ND - LT 3 Q	ND
PYRENE	ND - LT 2 Q	ND
BENZYL ALCOHOL	ND - LT 4 Q	ND
4-CHLOROANILINE	ND - LT 10 Q	ND
2,4-DIMETHYLPHENOL	60 Q - 946	ND
PENTACHLOROPHENOL	ND - LT 3 Q	ND
PHENOL	ND - 155 C	ND - 8.2
BENZOIC ACID	ND - LT 40 Q	ND
2-METHYLPHENOL	ND - LT 2 Q	ND
4-METHYLPHENOL	ND - 10 Q	ND
2,4,5-TRICHLOROPHENOL	ND - LT 25 Q	ND
CHLOROBENZENE	13 - 120	ND
ETHYL BENZENE	ND - 0.8	ND
METHYLENE CHLORIDE	ND - 57	ND
TOLUENE	ND - 25	ND
ACETONE	1 - 180	ND
CARBON DISULFIDE	ND - 10	ND

ALL ANALYSES EXPRESSED IN UG/L (MICROGRAMS PER LITER)

ND: NOT DETECTED
LT: LESS THAN
Q: QUESTIONABLE CONCENTRATION BASED ON DATA VALIDATION
C: CORRECTED FOR LAB BLANK.

TABLE 5

LINED LAGOONS - SEDIMENT DATA
CONCENTRATION RANGES OF INORGANICS
DRAKE CHEMICAL SITE

PARAMETER	ON SITE
ALUMINUM	875 - 2,190
ARSENIC	1.6 - 2.5
BARIUM	17.9 - 36.8
BERYLLIUM	LT 0.25 - 0.3
CADMIUM	0.34 - 1.0
CHROMIUM	6.6 - 7.8
COPPER	189 - 218
CYANIDE	219 - 300
IRON	2,900 - 4,540
LEAD	4.8 - 6.3
MANGANESE	12 - 29.1
MERCURY	0.7 - 0.85
NICKEL	5.3 - 11.4
SELENIUM	0.1
TIN	LT 1 - 4.4
ZINC	8.8 C - 16 C

ALL ANALYSES EXPRESSED IN MG/KG (MILLIGRAMS PER KILOGRAM)

LT: LESS THAN

C: CORRECTED FOR LAB BLANK.

TABLE 6

LINED LAGOONS - SEDIMENT DATA
CONCENTRATION RANGES OF INORGANICS
DRAKE CHEMICAL SITE

PARAMETER	ON SITE
BENZO(A)ANTHRACENE	ND - 105,000 Q
BENZO(A)PYRENE	ND - 250
BENZO(B)FLUORANTHENE	ND - 450
BENZO(GHI)PERYLENE	ND - 100
BENZO(K)FLUORANTHENE	ND - 340
BUTYL BENZYL PHTHALATE	ND - 110
CHRYSENE	ND - 270
1,4-DICHLOROBENZENE	ND - 70,000 Q
FLUORANTHENE	ND - 360
HEXACHLOROBUTADIENE	ND - 120,000 Q
HEXACHLOROCYCLOPENTADIENE	ND - 350,000 Q
PHENANTHRENE	ND - 160
PYRENE	ND - 290
1,2,4-TRICHLOROBENZENE	ND - 71,000 Q
BENZENE	ND - 600
CARBON TETRACHLORIDE	ND - 800
CHLOROBENZENE	90,000 - 5,000,000
2-CHLOROETHYLVINYL ETHER	ND - 21,000
CHLOROFORM	ND - 9,400
ETHYL BENZENE	8,000 - 100,000
METHYLENE CHLORIDE	3,000 - 6,000
TETRACHLOROETHYLENE	3,000 - 8,000
TOLUENE	ND - 4,500
ACETONE	ND - 13,000
O-XYLENE	64,000 - 1,000,000
DIELDRIN	ND - 2,400
FENAC	1.04 - 3,156 Q

ALL ANALYSES EXPRESSED IN UG/KG (MICROGRAMS PER KILOGRAM)

Q: QUESTIONABLE ANALYSIS BASED ON DATA VALIDATION
ND: NOT DETECTED.